

**CLAIMS**

1. A method of reducing the level of saturated fatty acids relative to the level of unsaturated fatty acids in bovine milk by:

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- (a) determining which cows of a herd produce milk containing  $\beta$ -casein having a proline at position 67, where the herd comprises cows that produce milk containing  $\beta$ -casein having a proline at position 67 and cows that produce milk  $\beta$ -casein having a histidine at position 67, by testing genetic material of individual cows of the herd for the presence of DNA encoding  $\beta$ -casein having a proline residue at position 67 or by testing milk produced by individual cows of the herd (or a product produced from that milk) for the presence of  $\beta$ -casein having a proline at position 67;

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- (b) selecting cows that have DNA encoding  $\beta$ -casein having a proline residue at position 67 or that produce milk containing  $\beta$ -casein having a proline at position 67; and

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- (c) milking the selected cows to give milk having a reduced level of saturated fatty acids relative to the level of unsaturated fatty acids compared with milk obtained from the herd.

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2. A method as claimed in claim 1 where the  $\beta$ -casein having a proline at position 67 includes one or more of  $\beta$ -caseins A<sup>2</sup>, A<sup>3</sup>, D, E and F.

3. A method as claimed in claim 2 where the  $\beta$ -casein having a proline at position 67 is  $\beta$ -casein A<sup>2</sup>.

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4. A method as claimed in claim 1 where the  $\beta$ -casein having a histidine at position 67 includes one or more of  $\beta$ -caseins A<sup>1</sup>, B, and C.

5. A method as claimed in claim 4 where the  $\beta$ -casein having a histidine at position 67 is  $\beta$ -casein A<sup>1</sup>.

- 5           6.    A method as claimed in any one of claims 1 to 5 where the level of short and medium chain saturated fatty acids having 6 to 14 carbon atoms in each chain (C6:0-C14:0) is reduced compared with milk obtained from the herd.
- 10           7.    A method as claimed in any one of claims 1 to 6 where determining which cows of the herd produce milk containing  $\beta$ -casein having a proline at position 67 is by testing genetic material of cows for the presence of DNA encoding  $\beta$ -casein having a proline at position 67.
- 15           8.    A method as claimed in any one of claims 1 to 7 where determining which cows of a herd produce milk containing  $\beta$ -casein having a proline at position 67 is by testing the milk produced by cows (or a product produced from that milk) for the presence of  $\beta$ -casein having a proline at position 67.
- 20           9.    A method as claimed in any one of claims 1 to 8 where the genetic material of the cows may be any tissue containing, or which contained, nucleated cells.
10.   A method as claimed in claim 9 where the genetic material is obtained from blood, hair, or milk.
- 25           11.   Milk obtained by the method as claimed in any one of claims 1 to 10.
12.   A milk product prepared from milk obtained by the method as claimed in any one of claims 1 to 10.
- 30           13.   A method of altering the proportions of saturated fatty acids and unsaturated fatty acids in a food by adding to the food an amount of  $\beta$ -casein having a proline at position 67.

14. A method as claimed in claim 13 where the proportions of saturated fatty acids and unsaturated fatty acids are altered by reducing the level of saturated fatty acids in the food.
- 5 15. A method as claimed in claim 13 or claim 14 where the food is milk or a milk product prepared from milk.
- 10 16. A method as claimed in any one of claims 13 to 15 where the  $\beta$ -casein having a proline at position 67 is added to the food by adding milk (or an extract from milk) obtained by the method of any one of claims 1 to 10.